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United States-Asia Environmental Partnership

Five-Year Review

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I am proud of the contribution America has made to prosperity in Asia and to the march of democracy. I have seen it in Japan after World War II. I have seen it, then, in Taiwan as the country became more progressive and less repressive at the same time. I have seen it in Korea as the country has become more progressive and more open. And we know we are making a major contribution to the astonishing revitalization of the Chinese economy, now growing at 10 percent a year . . . And I say, I want to expand that partnership.

President Clinton
American University, 1993

Foreword

The implications of rapid change, particularly of industrial and urban growth in the developing world, are promising and threatening at the same time. From one perspective, growth promises to meet the economic aspirations of most of the world's people. From another, growth poses an unprecedented threat to the natural environment and global systems. Nowhere is the tension greater than in the rapidly industrializing countries of Asia - where economic and population growth and environmental stress are converging most forcefully.

The *Five-Year Review* examines the organizing premises for the United States—Asia Environmental Partnership (Partnership) and four specific aspects of its operations. The *Review* confirms the continuing relevance of the organizing premises, notes the breath of Partnership ambition, and suggests the initiative has significant potential for both Asian and United States development, environmental, and economic interests.

A new appreciation of the Partnership evolved over the course of the *Review*. The Partnership is viewed as something more than a set of assistance modalities, project, or program—rather it is a broad-based initiative reflecting a mix of important ideas, approaches, activities, and capacities. While elements of the Partnership can obviously be replicated, it is significantly more than the sum of its parts. A summary representation would include the following elements.

The Partnership addresses an important and contemporary development problem. Reconciling the economic and environmental goals societies have set for themselves will be possible only through a transformation in technology—a shift, perhaps unprecedented in scope and pace—to new technologies that dramatically reduce environmental impact per unit of prosperity. Quite possibly, political leaders will face no greater development challenge in the decades ahead than reconciling these two goals.

The Partnership engages a very broad range of actors and forces. The Partnership has identified most of the actors and forces that must be engaged and strengthened to effect the fundamental transformation it espouses. The initiative is rooted less in the thinking and activity of development professionals and organizations than in the positive direction and evolution of industrial environmental performance itself, relying increasingly on the pro-environmental initiative of the private sector.

The Partnership is committed to cooperation as its operating principle. All activities seek to create new linkages; all attempt to connect actors from Asia with counterparts in the United States; and most call for cooperation among government, business, multilateral, and nongovernmental organizations. Many rely on cooperation inside networks or associations. None, however, require massive new transfers of aid or capital, or large-scale institutions; they rely instead, on new relationships within the private sector, supported and channeled by public activity.

The Partnership has an established institutional infrastructure. All international transactions face barriers of distance and culture. The difficulties are multiplied, however, if markets,

information sources, and/or the means of engaging potential partners are poorly developed. In these circumstances, the Partnership distinguishes itself through a well-established institutional infrastructure, following the development problem from top levels to on-the-ground representation in the outposts of the proposed "clean revolution" in Asia.

The Partnership is rooted in a regional context. The Partnership appears to be well-attuned to the forces that are driving economic growth in the Asia region and to opportunities for environmental progress there. Its appreciation for the Asian context is buttressed, of course, by USAID's fifty-year engagement in the region, including the agency's important association with reconstruction in Japan, East Asia's "economic miracle," the "green revolution"in India and the Philippines, the "demographic transition"in Indonesia and Thailand, and important new initiatives related to democracy and governance in Indochina.

The Partnership is increasingly relevant to new directions in international governance. Taking its clues from President Clinton's vision of a world community that is embarking on a course of rapid transformation, the Partnership foresees a business sector that can shoulder a broader policy role; NGOs that are less parochial and better able to operate on a large scale; international and regional institutions that can efficiently serve the dual masters of state and citizenry; and new institutions and policy approaches that match the transnational scope of today's challenges, while meeting citizen demands for accountable democratic governance.

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Five Year Review of US-AEP

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Executive Summary

The U.S.-Asia Environmental Partnership was organized by the U. S. Agency for International Development (USAID) in response to very rapid economic growth throughout Asia. The development challenge is defined by environmental sustainability, the institutional challenge by the dramatic improvement in the economic status of most countries in the region. From January 1992 through December 1996, the Partnership launched a wide range of commercial and development activity throughout the region. An evaluation was completed in 1995. In 1997, USAID sanctioned a *Five-Year Review*.

The *Review* assesses the continuing relevance of the organizing premises of the Partnership and to addresses four specific aspects of its operations, specifically: has the Partnership correctly defined the development problem, does the Partnership encompass the right geographical area, does trade have an appropriate place in the initiative, and does the Partnership have a results-oriented operational road map?

This report is the product of the *Five-Year Review*, authored by a principal investigator with input from an expert panel and representatives of the Partnership itself. The assessment is based on materials assembled or developed by the Partnership and related interviews conducted in Asia and the United States. Many observations are drawn from the insight and original work of individual panel members who are professionally engaged with issues of similar concern to the Partnership. The *Review* does not address questions of effectiveness or efficiency, which are better addressed by traditional evaluative methodologies. Nor does the *Review* restate analyses or strategies developed by the Partnership which are already recorded in other documents.

The report is presented in three parts—a first section directed to the continuing relevance of the organizing premises for the Partnership, a second section directed to the rationale for a continuing USAID engagement in Asia, and a third section directed to four different aspects of Partnership operations. With regard to premises, the *Review* finds:

- The Partnership, in keeping with its original charge, addresses an important and contemporary development problem.

- The moment is right for the kind of transformation necessary to resolve the tension between rapid growth and environmental protection in Asia.

- U.S. interests and foreign policy contemplate the kind of international leadership provided by the Partnership.

With regard to the four specific aspects of Partnership operations, the *Review* finds:

- Most of the basic building blocks for a "clean revolution" are identified and reflected in the Partnership's development strategy for Asia.
- The Partnership is operating in the correct set of countries, following the development problem to the outposts of the "clean revolution" in Asia.
- Development and trade activity are both compatible and important to the realization of U.S. development interests in Asia.
- Partnership, broadly-defined, is the key to any serious effort to effect a technological transformation sufficient to dramatically reduce environmental impact.

The *Review*, however, found areas where the promise of the Partnership is insufficiently realized:

- The scope for a "clean revolution" should include both energy and urbanization, in addition to industrialization.
- The policy context for a "clean revolution" should give greater credence to the function of the environmental regime and related public incentives, in addition to its focus on the industrial regime and related private incentives.
- The geographic scope of the Partnership should include China and Viet Nam, in addition to the modernizing countries of the region.
- The Partnership must make a greater effort to enlist Asian partners, in addition to the growing number of American relationships.
- The Partnership could usefully establish closer partnership arrangements with the Department of State and foreign policy establishment, in addition to its effective interagency arrangements with the Department of Commerce and Environmental Protection Agency.
- The trade side of the Partnership should more directly promote the adoption of clean process technologies, address a broader range of impediments to technology transfer (in addition to its useful transactional work), and develop new activities directed to technology innovation, diffusion and cooperation.
- The Partnership approach itself could be significantly more engaging, reaching beyond organizational or contractual partnership to a more extensive strategy, incorporating leadership and enrollment as important elements.

In summary, the *Review* concludes that the Partnership has correctly defined an important development issue—the opportunity for a "clean revolution" in Asia. It is operating in the right set of countries, with the right mix of U.S. interests and partners. However, to reach its goals, the

Partnership must adopt a pro-active and more extensive operational approach, and enrich its technology transfer activities to embrace process innovation, information dissemination, and international technology cooperation. Finally, it must dramatically increase the number of Asian partners.

1. Organizing Premises

1.1 Introduction

Sections I and II are directed to the premises underlying the original formulation of the Partnership. They do not address the specific operational questions specified in the scope for the *Review* which are addressed in Section 3.

The organizing premises for the Partnership are captured in the *Preface* to the Partnership's *Strategic and Action Plans, 1995*:

- Focus on the principal culprit—very rapid growth throughout the region.
- Articulate a transcendent goal—a "clean revolution," transforming development plans, the industrial regime, and urban habitats throughout Asia.
- Conceptualize a strategy that can have massive and immediate impact—extending the reach of United States environmental experience, practice, and technology to Asia, creating a "virtual" capability for environmental improvement in the near-term, and defining the United States as the referent for environmental quality over the longer-term.

The analysis in Section 1 underscores the challenge of rapid economic growth for the environment and highlights the unique opportunity to affect the problem in Asia. It also confirms the policy and institutional interventions necessary to have an important impact on the development problem.

1.2 A Contemporary Development Problem

Important turning points have characterized world development since the end of the Second World War. These include the end of the colonial era and the emergence of a "Third World," the reconstruction of Europe and Japan, and organization of the Bretton Woods system. They also include the transcendent success of the "green revolution," the triumph of the marketplace attendant on the collapse of the Soviet Union, the demographic transition in many countries on all continents, and, recently, the global movement toward democratic governance. Significantly, the United States government and USAID have been associated with each of these turning points. Indeed, USAID's Asia Bureau itself has been center-stage throughout the 50-year development era.

Another turning point in world development may now be in prospect, presaged by the Rio Summit and underscored by the apparent tension between economic and population growth and the

environment. The significance of the moment is described by the World Resources Institute in a set of recent publications, co-authored by a member of the expert panel for the *Five-Year Revie*w:

> Countries around the globe have set two potentially conflicting goals for themselves: improving environmental quality, in part by reducing *current* levels of pollution and resource deterioration, and achieving large, sustained increases in economic activity. Indeed, in a short twenty years, the Asian economy is projected to be six times what it is today. Quite possibly, political leaders will face no greater development challenge in the decades ahead than reconciling these two goals.
>
> If a doubling and redoubling of economic activity is accomplished with the technologies now dominant in energy, production, transportation, manufacturing, agriculture, and other sectors, truly catastrophic impacts are likely on global climate, human health, and the productivity of natural systems. Seen this way, reconciling the economic and environmental goals societies have set for themselves will be possible only through a transformation in technology-a shift, perhaps unprecedented in scope and pace, to new technologies that dramatically reduce environmental impact per unit of prosperity.
>
> Of course, it is not only technology that must change; values, lifestyles, and policies must change also. But, economic growth on an unprecedented scale will occur. For much of the world, this growth is essential to meeting basic needs and achieving acceptable levels of personal security and comfort. The bottom-line question remains: with what technologies will this growth occur? Only the population explosion rivals this question in fundamental importance to the planetary environment.

Environmental quality, of course, depends fundamentally on an interaction among population increase, economic growth, and technology. In principle, pollution could be controlled by modifying any or all of these three factors. In fact, however, extraordinary efforts will be required to stabilize global population at even double today's level, and raising income and living standards is a near universal quest. In this field of forces, the pollution intensity of production looks to be the variable easiest to manipulate, which puts the burden of change largely on technology. In fact, broadly defined to include both changes within economic sectors and shifts among them, technological change is essential just to avoid backsliding. Even today's unacceptable levels of pollution will rise unless the percentage of annual growth in global economic output is matched by an annual decline in pollution intensity.

The Partnership has taken a major step forward by promoting the types of policy and practice changes needed to realize modern technology's potential. Development goals and environmental indicators need to reflect a concern for industrial environmental performance. Measures of industrial productivity need to account for environmental costs. Environmental regulation and industrial policy need to promote long-term innovation and cleaner production. More effective economic incentives for new investments in clean technologies are long overdue. The pro-environmental pressures emerging in the international marketplace need careful nurturing. And, finally, altogether more

attention needs to be paid on how to transfer clean technologies successfully from country to country.

The new approaches being promoted by the Partnership are badly needed. Yet, despite enormous possibilities, environmental issues are absent in most discussions of industrial policy, national competitiveness, trade, and technology policy. To bridge these gaps, a new type of cooperation must be formed among the private sector, government, and environmental advocates. Together, they must work upstream to change the products, processes, practices, policies, and pressures that give rise to pollution and environmental degradation.

It is also important to note that the technological orientation of the Partnership goes a long way to rationalizing the inclusion of domestic economic interests in the overall concept. During a recent visit to Asia, Vice President Gore underscored the significance of the linkage:

> The United States has made tremendous progress over the past 25 years in protecting the environment, with the commercial sector serving as one of the most important engines of this progress. I believe that our private sector can help address many of our common environmental and development priorities through investment, technology transfer, innovation, and trade. *We must connect policy discussions on . . . the environment and science to commercial realities*. In the United States, we used to believe that growing our economy meant that we could not protect our environment. Now we have learned, in our context, that the opposite is true. Protecting our environment helps us to grow our economy.

1.3 A Turning Point

The world's environmental future will be determined in significant part by what happens in the rapidly modernizing countries-especially in Asia and Latin America-where economic and population growth and environmental stress are converging most forcefully. In these nations, economic activity has shifted toward industry and manufacturing, multiplying the sources of toxicity of local pollution. Carbon emissions from industry, transportation, and energy in these nations will be the major contributors to global climate change well into the next century.

As already observed, it is only by reducing pollution intensity that the total pollution load can be reduced while maintaining industrial growth. This can be achieved either by reducing the pollution intensity of industrial sectors or by altering the sectoral composition of production. Unfortunately, however, even these effects may be offset by rapid growth of industrial output. The pollution load in Asia and Latin America, therefore, will probably continue to grow and at an accelerating rate. The combination of increased pollution intensity and higher levels of production in Asia means, for example, that the total release of bio-accumulative metals will be as much as fifty times higher in the year 2010 than today.

Rapid economic growth, particularly industrial growth, is at the root of the problem. Yet, paradoxically, technology holds the solution. Modernizing countries can apply the technologies proven in the industrialized countries-by and large, pollution control and remediation. But they can also seek to transform ("revolutionalize" in the Partnership's vocabulary) basic industrial processes and products, building in efficiency and environmental soundness from the start. Both pathways have merit, and both can link the modernizing with the industrialized world, as well as Asia and Latin America with the United States. But a new balance between these two pathways is urgently needed so that generic, long-term, *transforming solutions* replace the wholesale transfer of today's "end-of-pipe" technology.

> The *Review* believes the Partnership's ambition for a "clean revolution," defined in its *Strategic and Action Plans, 1995*, is on target: "the widespread, continuing development and adoption of ever less-polluting and more resource-efficient products, processes, and services."

Technical constraints, of course, are not the principal factor limiting technological transformation. The biggest barriers to change are rooted in the social, economic, political, and cultural milieus in which technologies are developed, diffused, and used. Many impediments are imbedded in the structure of *public and corporate policy regimes.* The Partnership has identified a strategic number of policy and practice changes needed to realize modern technology's potential, including the redefinition of national economic and industrial goals and environmental indicators to address industrial environmental performance, the promotion of corporate transparency and environmental accountability, innovation in the areas of environmental regulation and market incentives, broadening and deepening of the pro-environmental pressures emerging in the marketplace, and the transfer of information and clean technologies from country to country.

1.4 The Moment is Right

The identification of the problem and formulation of potential solutions, however, are insufficient to nurture a "clean revolution." Some set of fertile circumstances need to be present to effect change—today, at national, regional, and global levels. A promising set of trends across this spectrum indicate that the *time is right* for the sorely needed technological transformation. The Partnership has clearly identified important national trends in its *Country Assessments, 1997*. This section addresses related regional and global trends.

1.4.1 Regional Prospects for a Clean Revolution

Parts of Asia have been uniquely successful in fostering growth, reducing poverty, raising living standards, and integrating with world markets. The credit for this remarkable achievement belongs to the governments and people of the region. They were not alone, however. Open markets in the industrialized countries and development assistance contributed to progress in the region-the United States being important in both regards. And although the region is the fastest growing in the world, Asia's record is not unblemished. Not all countries have sustained high rates of growth, and most countries have not given adequate attention to environmental protection and investment in infrastructure, which have too often lagged behind rapid economic expansion. Much has been achieved in Asia, but the template for sustainable development is not yet in place.

The Partnership directs attention to the remarkable probability that most countries in Asia have yet to install 80 percent of the industrial capacity they will have in the year 2010. This potential buildup in industrial capacity into the next century creates an enormous opportunity. *Assuming continued rapid growth, by the year 2010 existing industrial plant will represent only about 20 percent of total industrial output and, by the year 2020, less than 10 percent*. Clearly, if this capacity is built up with environmentally sound technologies, optimism about the region's environmental future is in order. If the economies of Latin America and the emerging markets in Eastern Europe incorporate environmentally sound technologies into their industrial systems, and if the corporate establishment in those economies adopt innovative environmental strategies, optimism about the world's environmental future will be in order as well.

Looking beyond the direct impact on ambient conditions, the situation in Asia also suggests an opportunity to transform the economic growth process itself—*to one that assures the widespread, continuing development and adoption of ever less-polluting and more resource-efficient products, processes, and services*. The Partnership's aspiration for a "clean revolution" just might be realized if national goals are properly articulated, environmental indicators properly configured, public and private incentives properly directed, institutions and institutional systems properly aligned, and technology cooperation and transfer between the modernizing and industrializing countries assured. Technological change has contributed most to the expansion of wealth and productivity in Asia. Properly channeled, it could well hold the key to environmental sustainability as well. Based on this insight alone, the Partnership is more than just another environmental project -- it is, indeed, the forerunner of a movement.

To underscore the point. Two environmental possibilities flow from the absolute level of investment in new plant and equipment. In rapidly growing economies, management will focus on industrial design, technology choice, and the production efficiencies associated with new plant and equipment, opening the door to clean design, clean technology, and clean production systems. In economies with slower rates of growth and smaller increments of new industrial capacity, environmental attention will probably remain focused on pollution control, waste minimization, and pollution prevention in existing plant. Seen in this context, Asia could build a clean industrial system from the bottom up, leaping over the costly, inefficient, and embattled experience of the industrialized countries.

Indeed, these potentialities are heightened in Asia where governments regularly intervene to promote development outcomes. Singapore and Taiwan appear to have been making environmentally friendly industrial choices for more than a decade, and the principal investigators observed signs of this direction in Indonesia, the Philippines, and Thailand. Some of these choices reflect a broad shift toward less-polluting manufacturing and toward services. Others reflect industrial location policies. Still others reflect environmental criteria for technology choice. The Partnership is absolutely on target in its quest to mainstream a concern for environmental quality within industrial policy and practice.

1.4.2 Global Context for a Clean Revolution

It is undoubtedly a cliche to suggest that the world is a different place today than it was before the fall of the Berlin Wall, before the information revolution, or before the forces of globalization became such an important feature of today's world economy. Tomorrow will always be different from today. This *Review*, however, underscores the significance of the *direction of the change*. Globalization, liberalization, and integration are the words most commonly used to describe the evolution of the world's economy in recent years. These are forces that can facilitate the spread of pro-environmental trends from the industrialized countries to the farthest corners and even smallest enterprises on the globe.

Globalization. Increasing involvement of both developed and developing countries in international markets and the growing international movement of goods, services, and money distinguishes the current economic regime from the world economy for which the Bretton Woods system was designed in 1944. Globalization refers to the increasing tendency of economic actors - such as multinational corporations, bankers, and investors - and trends - such as investment flows, currency speculation, even the "greening of industry" - to work at a global level. Global actors and trends are no longer tied to or controlled by particular nation-states. Trade, investment, business norms, and development values move freely and often rapidly across borders, often with substantial impact on domestic economies.

Liberalization. Globalization has been made possible by a number of political and technical changes. The end of the Cold War and the spread of liberal economic ideas, combined with increasingly rapid communications, transportation, and standardization of products has opened up goods markets and facilitated trade as well as facilitated the rapid flow of capital across international borders. The liberal economic model has been widely embraced in theory and practice by not only developed countries but also developing countries, recently under governments of both left and right.

Integration. Integration refers to the growing interdependence of national economies. Rising levels of imports and exports of primary, intermediate, and finished products and expanding flows of investment and capital increase the dependency of countries on the economic well-being and continued flow of goods and capital from their trading and investment partners.

The Partnership is prescient in appreciating the power of globalization, liberalization, and integration to facilitate the spread of pro-environmental trends. Until recently, government regulation and public pressure were the most important driving forces for environmental quality, to such an extent that firms directed their efforts completely to meeting requirements set by public pressure and government regulation. Regulations are being reinvented and becoming tighter. And new regulations are forcing firms to be more open and transparent, which will make them more vulnerable to further public pressure. Simultaneously, opportunities in both the consumer and industrial supplier markets are increasing, and it is becoming clearer that implementing cleaner technologies could lead to cost reductions in more cases than previously thought. In addition, actors such as investors, insurers, workers, unions, user firms, and consumers are increasingly integrating environmental concerns into their activities. All this implies that, in the future, firms will be confronted with a wider range of pro-environmental pressures from many more sources.

Specific examples can be found throughout Asia. There is an active reconsideration of command-and-control mechanisms ongoing in every country. Market-based incentives are being widely tested—for example, the use of tradeable permits in the Philippines. Innovative information strategies, like the PROPER system in Indonesia, are being widely discussed, and the debate over technology preference for new vs used equipment is alive throughout ASEAN. Environmental charters for the agricultural and chemical sectors are being developed by industry associations in Taiwan and Thailand, and the pro-environmental pressures emerging in the international marketplace (e.g., ISO 14000, "greening the supply chain," and the introduction of "environmental due diligence" by credit and finance agencies) have elicited a lively corporate response. In some countries, governments are even exploring public policy options to broaden and deepen these pressures. In response, many firms are adopting new environmental strategies, including the most advanced "closed-loop" industrial processes in South Korea and Taiwan....

The exact calculus for the interaction between the industrialized and modernizing economies is a subject for policy analysis and research. The export-oriented economies of the Asia region, however, as exquisitely sensitive as they are to the international marketplace, clearly show signs of a broadly based response to the rapidly developing environmental initiative among firms in the industrialized economies. As significant, governments throughout Asia (particularly agencies and ministries of commerce and industry) recognize that international pressures and emerging environmental norms are increasingly a part of the policy set they once thought exclusively domestic. The Partnership is absolutely correct in understanding these interrelated political and commercial phenomena as fundamental building blocks for a "clean revolution."

2. American Leadership

2.1 Introduction

The Partnership has identified an important development problem, and the *Review* finds the time is quite likely right for the sorely needed technological transformation, one that portends a major change in perspective for world development. The next part of this assessment addresses the question of American leadership. Is the United States able or ready to play a leadership role in Asia? Should the United States play such a role at all? What can the United States learn from its experience at important turning points in the past?

The *Review* finds that the United States has a well articulated rationale for engaging on important global development issues, integrating domestic economic, foreign policy, and international cooperation interests. Indeed, the rationale makes the case for a continuing USAID engagement in Asia, even among the modernizing countries.

Despite this rationale, USAID's role is continuously questioned. What value-added does it provide in a rapidly globalizing economy where the private sector is the driving development force? The *Review* identifies a leadership role for the agency. Based on its half-century experience in Asia and continuing credibility throughout the region, its action orientation, and its appreciation of the current development opportunity, USAID clearly has a key role at another important turning point for world development. Finally, the Review, finds that the template for success may be found in USAID's time-tested approach at similar moments.

2.2 United States Leadership Role in Asia

If the rapidly evolving Asian and global context suggests the premises for a clean revolution, so too does the emerging consensus in the United States on fundamental interests, foreign policy, and development agency. The line of argument from the President to Vice President to Secretary of State to USAID Administrator is straightforward: from a purely humanitarian standpoint, the United States knows that economic growth is the only way a society can provide its people with the permanent means of bettering their lives. From an economic standpoint, the United States knows that both it and the world will benefit from the greater prosperity, trade, and stability that such development can bring. And, from a bottom-line point of view, the United States knows that in the long run, peace and prosperity can only exist in a world of secure nations bound together by positive economic relationships and sharing an interest in sustainable growth and cooperation.

2.2.1 The Global Economy and American Leadership

The above line of argument is reflected in President Clinton's vision of America's future, which stresses the importance of the global economy, the role for American leadership, the connection between domestic and international economics, and the synergy between trade and development:

> The truth of our age is this-and must be this: open and competitive commerce will enrich us as a nation. It spurs us to innovate. It forces us to compete. It connects us with new customers. It promotes global growth, without which no rich country can hope to grow wealthier. It enables our producers, who are themselves consumers of services and materials, to prosper. American jobs and prosperity are reason enough for us to be working at mastering the essentials of the global economy. But far more is at stake. For this new fabric of commerce will also shape global prosperity or the lack of it, and, with it, the prospects of people around the world for democracy, freedom, and peace.

The fact is that for now and for the foreseeable future, the world looks to us to be the engine of global growth and to be the leaders. And our leadership is important for the world's new and emerging democracies. To grow and deepen their legitimacy, to foster a middle class and a civic culture, they need the ability to tap into a growing economy. Our security and prosperity will be greatly affected in the years ahead by how many of these nations can become and stay democracies. Democracy's prospects are dimmed, especially in the developing world by trade barriers and slow global growth. The habits of commerce run counter to the habits of war. So, if we believe in the bonds of democracy, we must resolve to strengthen the bonds of commerce.

2.2.2 Sustainability as a National Goal

Of course, the emergence of the global economy is not an unmitigated blessing. With globalization, a number of controversial issues have surfaced, for example, in regard to trade liberalization, including human rights, working conditions, environmental degradation, and conditions in developing countries. It is widely understood that current economic activity, that is, the current global economy, is not environmentally sustainable. This much was agreed on at the 1992 Rio Summit by more than 175 of the world's governments.

The Clinton administration has promoted sustainability as an important national value, reflected in its vision of long-term economic growth as creating jobs while at the same time improving and sustaining the environment. Reconciling these goals requires an environmental technology strategy that helps industry shift from waste management to pollution prevention, efficient resource use, and industrial ecology. This kind of forward-looking approach promises to help firms become more competitive by lowering their energy and resource needs, while reducing or eliminating their waste cleanup and disposal costs. Nationally, it promises to create economic growth by capturing the rapidly growing market for clean technologies and shifting money from

consumption of resources to investment in new plant and equipment. Globally, it promises to help developing countries leapfrog directly into sustainable technologies in many industrial and service sectors.

This approach–focusing as it does on sustainability, the tension between growth and the environment, and the synergy between national values and international norms-defines an important part of the context for the *Five-Year Review*. Vice President Gore has made these points over and again, most recently in Asia:

> Economic and security issues are vitally important, yet they are undergirded and integrally connected to our stewardship of the planet. The growth of our economies and the stability of our societies are intertwined with the effects of environmental degradation, resource depletion, threats to human health, and population shifts. The meeting in Rio *revolutionalized* the way governments approach environmental concerns by highlighting the linkages between sustainable development and continued freedom and prosperity. So, we are building a substantive agenda of cooperation that is reaching to all corners of the world. In moving forward, we must never forget that the well-being of our planet depends on more than efforts by governments. All the people of our nations have important roles to play.

2.2.3 U.S. Foreign Policy after the Cold War

The development community has waited a long time for international development themes to be mainstreamed at the Department of State. For a generation, foreign assistance was an important policy tool, one of an arsenal of tools available to contain communist expansion and to combat Soviet influence. Development assistance levels mattered. Today, some ten years after the fall of the Berlin Wall, Secretary of State Albright is articulating an array of foreign policy goals and international interests that argue for a powerful, new development mission-a mission in which *ideas and values matter*.

In response to the redefinition of national security in the aftermath of the Cold War, President Clinton and Secretary Albright have fundamentally changed the focus of American foreign policy. To function successfully in a diverse, fast-paced and rapidly changing world, the Secretary asserts that ." . . the United States will need women and men trained to deal with the world not as it was but as it is and will become." And she forcefully suggests, as Secretary Christopher did before her, that threats to the safety and well-being of Americans in the next century are more likely to come from armed drug cartels, *environmental degradation,* and overpopulation than from Russian missiles.

The Secretary also articulates an approach to the execution of foreign policy that is essentially developmental in nature (this in addition to the statement of development goals). The approach suggests a new goal or endgame for nation-states in the development process-one that is no longer defined by GDP levels but rather by adherence to the norms of the emerging international system. The following excerpt from the Secretary's down-to-earth thinking makes the point:

> I have tried to organize some way of thinking about countries at this current stage. I think there really are four groups. The first is the largest group, and that is what I would call those who see the advantages of a functioning international system, *who understand the rules*, who know that a rule of law system works, that diplomatic relations can go forward. This is the largest group. The second are the newer evolving democracies who would very much like to be a part of an international system and obey the rules but who may not have all the resources, capacities, or systems yet to fully participate in it. The third group are what we have called the rogue states. The fourth group are basically the failed states. Now, a long-term goal for the United States and for other countries, in order to make our citizens prosper, is to try to get everybody into the first group, which means to see that the new democracies have the ability to participate properly.

In an important sense, development becomes both the medium and the message in the Secretary's vision of international progress. Also implicit is a set of normative arrangements and expectations to govern access, membership, and participation in the emerging international system. *These norms take their clue from the President's vision of that system-focusing on American expectations related to economic, social, governance, and ecological values.* The role these normative arrangements and expectations are coming to play in international relations is reflected in current international (and domestic) pressure on governments and firms related to child labor. Similar pressures, related to environmental protection, came to bear on governments and firms, both international and domestic, in the debate on the North American Free Trade Agreement.

Significantly, these norms are not a manifestation of a new *pax Americana*. The end of the Cold War brought in its wake something more than a simple adjustment among states. Rather, it brought a fundamental redistribution of power among states, markets, and civil society. National governments, including the United States, are not simply losing autonomy in a globalizing economy. They are being forced to share powers - including political, social, and security roles at the core of sovereignty - with businesses, international organizations, and multiple citizen groups, both as individual consumers and as represented by NGOs. International standards and norms, are gradually beginning to override claims of national or regional singularity. Even the most powerful states find the marketplace and international public opinion compelling them more often than not to follow a particular course.

The same trend is evident in global environmental rule making. Up to recently, most policy makers thought international environmental arrangements and expectations comprised treaties and declarations of states; a public law model predominated. But, alongside that process and little remarked on, a system of private standards and obligations has been developing. One sees it in the private law model applicable to producers of goods and services rather than to states, specifically, in the rising prominence of ISO 14000 as the global standard for environmental management. One also sees it in efforts of multinational corporations to "green the supply chain," of industry associations to introduce "environmental charters" as voluntary business standards, and of financial institutions to introduce "environmental due diligence" to consideration of investment proposals. Suffice it to say, nonstate actors are an important new element in international affairs, directly

engaged with member states' own interests in defining the rules, norms, conditions, arrangements, and expectations for admission to membership in the new international system.

2.2.4 A Contemporary Development Mission

Against this set of national values, goals, policies, and approaches is an exciting new opportunity for USAID in the pursuit of American interests. Admittedly, many modernizing countries have increasingly mature, even advanced, economic and technology systems that can take advantage of the marketplace to attract investment capital, develop new trading relationships, leapfrog to more advanced technologies, and absorb the best in environmental practice - in other words to "take off" and become self-supporting. Nevertheless, a difficult range of issues limits engagement of the advanced systems of many modernizing countries with global systems. Many of these issues are rooted in the social, economic, political, and cultural milieu and history of these countries. Most reflect normative dissonance with the requirements for entry to the new international system.

Vice President Gore framed the challenge for USAID during his recent visit to Asia:

> At the 1992 Conference in Rio, the nations of the world pledged to tackle our most serious environmental threats. Unfortunately, while governments have become skilled at articulating the problems, we have not developed a comparable skill, as yet, in developing and implementing sustainable solutions. This challenge is at the outer boundary of what is possible for us as a global civilization to successfully resolve. Yet, we must rise to the challenge. We must do a better job.

In this circumstance, a continuing American role in the international development effort could be pivotal and in keeping with the foreign policy goals and approaches of President Clinton and Secretary Albright. Yet, as noted by the Administrator of USAID, Brian Atwood, development assistance as the basis for development cooperation among the modernizing countries misses the point and possibly even the opportunity. Indeed, he makes clear that the luxury of an open-ended assistance program for these countries - something never envisioned by the pioneers of development policy - no longer makes sense. And, even if it did, the United States can no longer afford it. As the world enters the twenty-first century, USAID reliance on its own bureaucracy and project-oriented programs for the modernizing countries will not work. The Administrator recognizes - and US-AEP reflects his understanding - that development assistance *can only play a supporting role* to the contributions of the U.S. private sector, international investment and technology transfer, the contributions of the U.S. academic and scientific communities, the development efforts of American NGOs, and, most of all, the growth-oriented example, wealth-generating dynamism, and increasingly sustainable development model of the United States economy itself. As the Administrator recently stated:

> We have within our grasp the capacity to build a global community in which population is in better balance with resources, in which human health everywhere is more secure, in which the participation of people in the development process is taken for granted and in which economic opportunity is more widespread. In much of the world - especially in Asia and Latin America - the most basic challenge is how to build on the substantial development progress that has been made to help these nations become full members of the global economy, the last step in the development continuum. We can do these things.

2.3 United States Leadership Role: A Rationale

There are, at least, four reasons that the United States should seek out a leadership role.

USAID's Public Policy Advantage. The Partnership has done a good job at observing and cataloging the global and regional trends that might break the destructive linkage between economic growth and environmental degradation. Indeed, the Partnership has taken a step beyond observation to identify the important connections among them - between the pro-environmental pressures emerging in the international marketplace and industrial policy, between environmental "due diligence" and the opportunity to get pro-environmental incentives out in front of new investment. The significance of its insight is confirmed in discussion at other federal agencies - agencies with professional and technical expertise and experience of their own. Nevertheless, they show a keen interest in engaging with USAID - not because anyone at USAID is inherently wiser than anyone else at another agency, but because of its facility in making the kinds of connections identified above. Few federal agencies (even private institutions for that matter) have had the opportunity over such an extended period of time to look at as broad an array of public policy issues. Neither have many agencies had the opportunity to integrate so much of that insight and experience into actual policy proposals, institutional recommendations, and technology transfer.

USAID's Public Policy Authority. Some of the insight reflected in Partnership thinking constitutes the premise for innovation in public policy in Asia-illustratively, policies for deepening and broadening market pressures to speed up the process of change in firms from defensive to innovative environmental management. Deepening of pressures might include work like the Partnership is already pursuing to force firms to become more open and accountable. Broadening of pressures suggests government action to elicit pro-environmental pressures from new sources, such as investors, insurers, user firms, and the public. Make no mistake, the challenge will be difficult - in many cases cutting across the normative grain - as any move to promote public disclosure in Asia certainly will be. The advocacy work required is clearly a function of government, one that USAID's own long experience with policy dialogue could greatly assist. Policy innovation will require legitimization in Asia, both for the ideas and for the proponents. USAID's long development experience in the region lends it legitimizing authority, suggesting an ISO-like accrediting role for public policy.

USAID as an Agent of Change. Of course, the kind of change envisioned by the Partnership is complicated. One member of the review panel has written: ." . . it must be said that the application of technology to environmental improvement in the developing world is a somewhat messy business-one without magic bullets, one that no single actor can engineer, and one that every country and even every company must carry out without benefit of a universal template. This fact both compounds the challenge and increases the importance of supplying the missing links between technological change and environmental improvement." This is the classic milieu for USAID–in this case, on the outposts of the "clean revolution."

Reaching Critical Mass. Finally, it is heard over and again that the trends are there and that the outcome is assured. Why not move to other, less tractable problems? Because a window exists in Asia that may not occur elsewhere or again. Now is the moment to get in front of the industrial transformation, to mainstream the concern for environmental quality, and to realize Brundtland′s dream and America's commitment to sustainable development. *The time to build a sustainability template is now; the place is in Asia.* The "clean revolution" is premised on a set of national, regional, and global trends which must reach a critical mass to take hold and which, therefore, require pro-active promotion. No single government or private sector entity is as well-equipped as USAID to provide the requisite leadership. The Partnership's agenda is important for the environment in Asia, but even more so as a global model for sustainable development.

2.4 Building on a Proven Approach

In 1997, we are at the threshold of "economic globalism." USAID has highlighted an important problem and opportunity related to that phenomenon, and the Partnership is an interesting effort to promote development in this new context. Fortunately, there is analogous experience to draw on for the exercise of development agency in the twenty-first century. And it is that experience and those related lessons that constitute the criteria for this *Review*.

Looking back at the early 1960s, the development community working on preventive health was the first to go global. They did not define the smallpox problem by the boundaries of geography—rather by the boundaries of epidemiology. They went to the problem. The population explosion was next, and the development community in that situation enlisted a vast number of partners and moved out again without regard to boundaries. To a large extent, the "green revolution" followed the same pattern. In that situation, an American, Norman Borlaug, *spawned a movement*, funded in part by USAID but also by numerous other sources. Even more significantly, he enlisted a multiple of players, stimulated entirely new bodies of debate and literature, articulated new goals, established new performance measures, promoted incentives for change, established new institutions and realigned others, and facilitated technology cooperation and transfer between developed and developing countries. We take the "green revolution" for granted today, but at a critical moment, Norman Borlaug did for world development what forward-looking development people at the Partnership would do today in promoting a "clean revolution."

These earlier movements shared a number of common characteristics which the *Review* used as criteria for examining the Partnership initiative and which USAID might want to re-examine:

Driven by Values and an Overarching Idea. In each case, the definition of the problem was driven by value considerations, and a major new approach to the problem was specified.

Reflected a Technology Shift. In each case, scientific knowledge was in place to permit the development of technology.

Information Available. In each case, information was widely securable through both public and private extension.

Leadership Taken. In each case, the United States demonstrated important leadership, nurtured by USAID, that grew to global citizenship. Multiple actors were enlisted and partnerships formed, bringing together many different citizen and professional communities sharing common values.

Private Sector an Important Factor. In each case, the private sector and marketplace became important factors in the long-term success and sustainability of the movement.

Institutional Realignment. In each case, by shaping and legitimizing attitudes, policies, law, and institutional capacities, these successful movements opened up new markets and changed the demand curve for technology.

Professional Cadre Enlisted. In each case, a professionally strong, leadership-oriented, cadre with a strong sense of mission and values was enlisted.

The argument here is straight-forward. USAID has within its institutional experience the formula for promoting new ideas and development success—for creating a development movement. Interestingly, the greater part of this experience is in the Asia region, fostered by USAID′s Asia Bureau itself. The Partnership has adopted many—but not all—of these success elements in its operational approach. In the following sections, these time-tested elements will be used as criteria for the four questions posed to the *Review*.

3. Partnership Operations

3.1 Introduction

USAID's Asia Bureau charged the *Review* with four questions:

- Has the Partnership defined the problem correctly?
- Is the Partnership encompassing the right geographical area?
- Does trade have a place in the initiative?
- Does the Partnership have an operational road map?

The following analysis is based on materials assembled by the Partnership. It does not reflect primary research nor an evaluation of effectiveness or efficiency of actual operations. Section I of this report presented the broad finding confirming the soundness and continuing validity of the organizing premises for the Partnership. Part II supported the early premises with an analysis of emerging trends in U.S. policy and review of tine-tested USAID success factors.

The *Review* finds the "clean revolution" to be an interesting short-hand for a large set of important economic and environmental concepts. The Partnership's analysis of underlying trends is acute, but it must continue to be sensitive to the continuing evolution of the ideas and concepts which are at the heart of the associated technological transformation. In this regard, the Partnership should continue to stimulate, promote, and incorporate, high quality information and research to ensure that the activities of industry, government, the public, and the Partnership itself, are consistent with the stated goals of the "clean revolution."

The *Review* congratulates USAID on following the development problem to the geography. As a result, the Partnership is in the right region and countries. The *Review* is similarly impressed with the sophisticated merging of U.S. domestic and international interests in the realm of international trade and development cooperation. This sophistication is further revealed in the Partnership′s concern for the impact of regional trade and investment on the environment.

The Partnership's ambition for a "clean revolution" in Asia is clearly unattainable using a traditional project-oriented approach. There are insufficient resources and time. The Partnership correctly recognizes that a "new way of doing business" is in order, and it has taken some interesting steps. But it is the judgment of the *Review* that a significantly more extensive, decentralized approach to development promotion is required. Partnership is part of the answer, but leadership and enlistment will be equally important, to the mobilization of a movement.

3.2 A Clean Revolution

The Partnership has described its development goal as a "clean revolution" in Asia. Is the goal consistent with the development problem? Is it possible?

3.2.1 Correctly Defined

The Strategy. The Partnership correctly identifies technological transformation as the primary strategy for avoiding environmental degradation, elaborating on the strategy with a more direct concern for the industrial growth model itself, articulating a strategic range of policy and practice change necessary to effect the desired result. In this regard, the "clean revolution" is directly linked to sustainability concepts, is working at an appropriate level of abstraction, and reaches a much broader range of development issues than usually associated with either industrial pollution or even the environment.

Global Trends. The Partnership has identified the major global trends that condition the prospects for a "clean revolution:" *(a)* leadership firms around the world are adopting environmental protection and quality as a strategic business factor; *(b)* globalization and standardization are extending the reach and influence of these firms to the farthest corners and smallest enterprises of the world; *(c)* globalization is also extending the reach and influence of liberal economic ideas, with real significance for the environment; *(d)* the prospects for an environmental transformation are enhanced by the technological potential for pollution prevention and clean production; *(e)* the rapid expansion of industrial capacity creates an extraordinary opportunity for the introduction of an environmental dimension to the production system; *(f)* new sources of investment suggest opportunities to engage global capital for needed environmental infrastructure; and *(g)* the ongoing "reinvention" of environmental regulation away from sole reliance on command-and-control approaches and toward a policy mix that includes pollution prevention, market-based incentives, information-based strategies, and voluntary compliance re-enforce the trends identified above.

Regional Trends. The Partnership has also identified a set of supporting regional trends: *(a)* evidence of movement up the environment and technology ladder from pollution control (even from pollution prevention in some countries) in the direction of clean design, technologies, and production; *(b)* increasing recognition of the importance of environmental infrastructure to cleaner production systems; *(c)* the engagement of an expanding number of institutions in the environmental dialogue, including, for example, ministries of development, economy, finance, and industry; the S&T and R&D establishment; and private financial community; *(d)* some evidence of the promotion and deployment of innovative policies, for example, market- and information-based incentives, voluntary compliance schemes, and private sector financing of infrastructure; (e) a firm understanding (perhaps better than in the United States itself) of changing corporate, industrial, financial, and state structures to take account of the environmental opportunities inherent to a globalizing world economy, for example, the role of private ordering arrangements, such as ISO 14000, "greening of the supplier chain," and international partnerships; (f) a growing commitment to the idea of environmental stewardship among major firms and industry associations; (g) increasing sensitivity to the role of public awareness and participation in creating a supportive enabling environment for a clean revolution.; and (h) a firm commitment across the region to the positive role of the private sector and marketplace in international technology development, adaptation, diffusion, cooperation, and transfer.

"Clean Revolution." The key elements of the "clean revolution" are on target: *(a)* the focus on economic and industrial growth; *(b)* the linkage between industrial growth and a technological transformation; *(c)* the priority given to industrial environmental performance as both a national economic and industrial goal and as an environmental indicator; *(d)* the attention given to getting in front of the investment curve with clean process technologies; *(f)* the attention directed to corporate disclosure and environmental accountability; *(e)* the effort to broaden and deepen the new, pro-environmental pressures emerging in the marketplace; *(g)* the appreciation of the role for technology cooperation and transfer; and *(h)* the priority given to the relationship between industrial growth and environmental infrastructure.

Major Development Themes. Indeed, the Partnership's attention to *(a)* how concern for environmental quality can be mainstreamed in public policy; *(b)* how public policy and development agency can facilitate the "greening of industry;" *(c)* how nonstate, pro-environmental pressures can positively affect both public policy and industrial practice; and *(d)* how the forces of globalization can be used to promote a clean revolution are absolutely prescient - distinguishing the Partnership as an important, forward-looking development initiative.

3.2.2 Insufficiently Realized

Energy and Urbanization. Energy and urbanization should be integrated into the "clean revolution" concept, conceptually if not programmatically, to take account of the interrelationship among the three important development sectors. In this regard, the *Review* appreciates the management concerns that led to the rigid sectoral boundaries put on the Partnership. However, equally rigid geographic boundaries prevent the Global Bureau from operating energy and urban sector activities in many of the countries important to a "clean revolution" in Asia.

Environmental Infrastructure. While environmental infrastructure is included within the conceptualization of the initiative, there is no discernible strategy. The *Review* recommends that the Partnership develop and implement such a strategy, perhaps in collaboration with USAID's Global Bureau which has an extensive program and experience in Asia.

The Marketplace and Public Policy. Although the Partnership has a largely appropriate appreciation for the pro-environmental pressures emerging in the marketplace and for the role of the private sector itself in effecting a "clean revolution," the danger exists that enthusiasm for that insight may discount the continuing and important role for public policy and environmental regulation. The use of different instruments and actions should be seen as complementary. Stringent and certain regulation is needed and should not be replaced by voluntary action. Voluntary action is necessary but will work only when it has the force of law behind it.

ANE Priorities. The *Review* is struck by the fact that the two remaining USAID missions in East Asia have not incorporated the ideas, approaches, or activities of the Partnership within their strategic planning. The *Review* is uncertain what conclusions to draw from this apparent

inconsistency in USAID's Asia Bureau strategy, suffice it to say, the apparent disconnect misses an important opportunity for leverage on an important development problem.

Technology and Development. Perhaps most important, the *Review* recommends a more careful look and engagement with issues related to technology demand, adaptation, innovation, development, and diffusion. The Partnership's technology attention is currently directed to first-tier manufacturing, less so to engineering and capital goods manufacture, even less to research and development. Given that the primary strategy is a technological transformation, this limited focus is inappropriate. The conceptual framework implied by the words "technology transfer" may, in fact, impede effective application of technology. In the technology-transfer mind set, technology is often equated with hardware and considered transplantable. In fact, the "software"-the skills and resources needed to adapt technology-is at least as important. Similarly, transfers of technology are often seen as transactions at a single point in time, even though a fundamental of successful technology management is the need for constant incremental improvement. Unfortunately for the modernizing countries, a fixation on the transfer of equipment can consign the recipient to continued dependency.

Recently, the concept of "technology cooperation" has come into use as the problems with technology transfer have become clearer. Technology cooperation implies an active enduring collaboration among parties, not a one-way, one-time move. The ultimate issue, of course, is less one of terminology than of mentality. Concern about the hardware of industrialization needs to yield to concern about the software of context, in which long-term environmental and social goals are considered with near-term economic gains. Policies must be designed to create adaptive capabilities rather than simply to encourage its passive acceptance after international transplantation. And long-term mutually dependent relationships need to replace casual or brittle connections between technology providers and users.

This larger conceptualization of the role of technology in the "clean revolution" is fundamentally important. Although India, South Korea, and Taiwan have important engineering and capital goods industries, buttressed by an impressive scientific infrastructure, other countries in the region do not. It will be difficult for these modernizing nations to develop public policies, environmental or industrial, without a much closer relationship with the primary sources of engineering and capital goods and with research and development. On the other hand, that very requirement creates a strategic opportunity for the United States to bring the modernizing countries within its larger economic and technology orbit, an opportunity accentuated by the relative openness of the American system.

3.3 Presence/Nonpresence

The Partnership is working in many countries long-since graduated from development assistance. Is it appropriate for USAID to continue development activity in those countries?

3.3.1 Correctly Defined

Countries. The Partnership has followed the development problem to the right countries, to the modernizing economies where one might expect a "clean revolution" to take hold-to Malaysia and Thailand, South Korea and Taiwan, even to Hong Kong and Singapore. These are the rapidly growing economies expected to add significant increments to industrial capacity over the next twenty years. In addition, these countries have liberalizing economic regimes and are export-oriented, opening their industrial regimes to the pro-environmental forces of globalization. The Partnership has directed attention to neither Bangladesh nor Nepal, both being at a pre-industrial stage of development. This country focus is entirely consistent with the evolution of American foreign policy as discussed earlier.

The Region. The prospects for effecting a "clean revolution" occur on a regional, not bilateral, basis. It is unlikely, for example, that either Indonesia or Philippines will effect a "clean revolution" outside the context of the region. Several reasons exist for this: *(a)* trade interdependence among these countries is growing with a significant buildup in capital goods trade from South Korea and Taiwan—the region itself is becoming its own important and rapidly expanding market; *(b)* direct investment flows within the region have also rapidly expanded—the modernizing countries themselves emerging as a major source; *(c)* such investments have become an important instrument for the so-called "flying geese" pattern of industrial investment—the relocation of sometimes *dirty* industries from one tier of economy to the next in response to shifting comparative advantage; *(d)* economic liberalization throughout the region is providing a foundation for the success of regional cooperation, reflected in the move toward regional and subregional free-trade zones and also the Asia-Pacific Economic Cooperation (APEC), Association of South East Asian Nations (ASEAN), and the Asian Development Bank; *(e)* Asia's centrally planned economies are now open to the outside world, enlarging opportunities for business and cooperation; *(f)* infrastructure development is increasingly realized on a regional basis; *(g)* Singapore, and perhaps even Taiwan, are developing into "green hubs" providing invaluable environmental leadership in a region where intraregional bench marks are important; and, *(h)* the countries in Asia benchmark off each other.

Criteria. Earlier movements or turning points for world development had their immediate impact, serendipitously, in countries that were poor. Certainly, poverty was a causal factor in shaping some portion of most of the development problem or an inhibiting factor in preventing effective action in others. But in no case were the development problems defined by poverty. Rather, the development problems were characterized by a lack of conceptual understanding of the problem itself, a lack of information and knowledge about the possibilities of change, the absence of supporting public policies and legal arrangements, inadequate institutional arrangements (public, private, or both), weaknesses in the ability of local constituencies to demand and support action, and a lack of adaptive research and technology capacity to monitor and adjust the core solution (technology) to the specific conditions of the marketplace. Indeed, these are the classic barriers to effective problem management and to achieving positive results.

Additionally, and looking back at the Albright formulation of new foreign policy approaches, Asia is not yet a full member of the new international order. Important normative differences exist

between most of the Asian countries (not including Japan) and the OECD countries with regard to important aspects of economic, social, governance, and ecological management. These differences constitute an important development agenda, rationalizing USAID's engagement in each of the seven nonpresence countries in Asia.

3.3.2 Insufficiently Realized

China and Viet Nam. Although appreciating the political issues associated with Partnership engagement in China and Viet Nam, the *Review* would be remiss if it didn't underscore the rather obvious point that the two countries are key to any regional understanding of the development problem. It is unlikely that anything like a "clean revolution" will be possible in the East Asia without engaging China, as it would be in South Asia without engaging India.

Japan. In this regard, the *Review* was also struck by the lack of engagement with Japan, as a cooperating partner. Two reasons exist for this. First, Japan is the largest economic actor in the region. As noted with regard to China, no prospect exists for a "clean revolution" in the region without the active engagement of Japan. Second, the government of Japan has launched a major effort to promote eco-efficiency in the region, an effort that could be mutually supportive on the development side with the Partnership. Indeed, several reports of Japanese government–funded studies identify the Partnership as a promising development model. The *Review* is also struck by USAID's interest in this kind of cooperation (e.g., the Common Agenda) in contrast with the Partnership's own standoffish attitude. Although rationalized in terms of trade rivalry, the argument seems inconsistent with other examples of cooperation with trading rivals, illustratively, with the Development Assistance Committee of the Organization for Economic Cooperation and Development (e.g., Shaping the Twenty-First Century).

Asian Partners. Perhaps most important, the *Review* is struck by the altogether insufficient engagement with Asian partner organizations and leadership organizations (with the notable exception of APEC-an important emerging success story for US-AEP). It is critically important that long-term, mutually dependent professional and institutional relationships assume a larger importance to the more casual or brittle connections between technology providers and users.

Expansion of the Partnership. The Review is aware of USAID's current interest in expanding the Partnership initiative, or parts of its operations, to other regions, possibly to other development problems. These questions are not within the scope or competence of the current *Review*, except to note that the Partnership initiative is rooted in regional context, suggesting that a careful review of country and regional settings precede any decision to expand. The *Review* suspects there may be other compatible regions (e.g., Latin America) but observes that most of these settings will probably be among other nonpresence countries.

3.4 Trade and Aid

The Partnership responds to two different United States interests: domestic economic interests and international development interests. Are these interests compatible?

3.4.1 Correctly Defined

The Global Economy. An argument is made that the increase in trade and international capital flows has made bilateral development organizations irrelevant to development. The point, of course, has some validity. In 1995 private capital flows to developing countries through both direct investment and capital markets totaled $193 billion. Today, public resource flows, which as recently as the late 1980s had provided three-quarters of the external financing for development, made up less than one-quarter of such flows. As a result, a growing number of countries no longer need traditional forms of development aid. *Their progress now substantially depends on their deepened integration into global trade and financial markets - markets that provide an opportunity to broaden and deepen the pro-environmental pressures, as discussed earlier in this report*. Under the circumstances, it is important to reach a new understanding of international development efforts to meet contemporary foreign assistance purposes, for which bilateral development organizations are still an important tool. Trade and aid can and ought to coexist.

The Environmental Marketplace. The market for environmental technologies and services is growing in the United States and abroad and in both modernizing and developing countries. As more countries respond to their environmental problems, the global market is likely to continue to expand. Although the global environmental market is large, most environmental expenditures go to day-to-day operations and construction of facilities; international trade thus fills only a small portion of environmental demand. In the long run, the *Review* concurs with the Partnership that cleaner technology and production processes probably have the greatest potential to generate more export-oriented growth and jobs than conventional pollution control equipment.

The Transactional Approach. It is also important to note that the current engagement at the transactional level has paid off for the Partnership in two important ways. First, on-the-ground, "in-the-trenches" work has given the Partnership a certain measure of confidence in and credibility for its larger development mission. Second, representational and transactional work has apparently helped to build a significant constituency for the Partnership in the United States.

3.4.2 Insufficiently Realized

Beyond "Early Warning." With regard to transactional work, it may be useful to point out the obvious-the United States does *not* have a dominant or even predominant international position in either the pollution control or clean production markets, from either a technological or competitiveness perspective. To succeed, American firms may need to adapt products developed for U.S. needs to sometimes quite different conditions in other countries. Although American environmental standards enjoy a good reputation, potential customers in modernizing country markets sometimes see U.S. products as too expensive or too sophisticated. Further, some U.S.

suppliers are viewed as insufficiently concerned with service, training of personnel, and provision of parts. These are all areas in which the Partnership may want to pay increasing attention, in addition to the "early warning" and trade leads system that it has successfully championed.

Priorities. The orientation and institutional incentives for the technology transfer component of the Partnership are directed to end-of-pipe environmental technologies, yet the Partnership's development strategy is directed to cleaner and more efficient process technologies. This appears to be a fundamental anomaly in relating the trade and development strands of the program. While articulation of criteria for a process-oriented technology transfer strategy will be a complicated task, it is critical to make the trade aspect of the Partnership coincident with its development goals.

Representation. With regard to representation, the reviewers find some confusion concerning the role of the Partnership's technology representatives. Although ample evidence exists that this representation has served U.S. interests and the Partnership well on the commercial side, the responsibility of the "tech reps" for the developmental (even operational) elements of the Partnership is not clear to most Asian counterparts, even to the Partnership's own contractors and partners.

Partnership. The Partnership has not yet fully engaged itself when formal aspects of certain partnerships should be terminated (or graduated). The *Review* came to no fixed position on this issue, other than to suggest at some point that some partnership arrangements should probably be declared a success and allowed to flourish and multiply without continued USAID direction and financial support. The relationship with the Foreign Commercial Service may have reached such a point. Illustratively, until the relationship is resolved, it will be difficult for the Partnership to explore other private sector options for technology intermediation. Having identified the issue, the *Review* is fully cognizant of the strong argument for continuing the formal relationship with the Department of Commerce (e.g., for continued representation and in-country support). Nevertheless, it is an issue to keep at the forefront as the Partnership matures.

Larger Institutional Opportunities. Again, moving beyond transactions, there may be opportunities for greater impact and leverage up the ladder from transactions in the direction of the larger institutional barriers to technology transfer. Illustratively, information may be the most effective avenue for reconciling development and commercial objectives - providing modernizing countries with objective information about products, approaches, and technologies being sold. An enormous opportunity exists for working with government, nongovernmental, and private organizations in this regard - from the Department of Commerce's National Institute for Standards and Technology (NIST) to the Environmental Protection Agency, organizations such as the National Pollution Prevention Roundtable, and organizations that maintain the vast information resources in commercial publishing and technology fields. The reviewers believe this to be a prime area for partnership work - partnership being preferable to direct Partnership operation of its own proprietary system.

Trade Policy. Finally, the reviewers suggest that the Partnership might also usefully explore its potential contribution to trade policy and trade negotiations with Asian nations (and/or explore

the leverage those negotiations might lend to its development agenda). For example, USAID and the Environmental Protection Agency had a productive partnership working with the Office of the Special Trade Representative and the government in Chile in the context of NAFTA negotiations.

3.5 A New Way of Doing Business

The Partnership is presented as a new approach to development promotion—"a new way of doing business." Is it? Is it effective? Are there additional opportunities for innovation?

3.5.1 Correctly Defined

Partnership. The *Review* finds that *an extensive, decentralized partnership approach is the only way to meet the ambitious goals defined for the "clean revolution" by the Partnership*. This view is buttressed by USAID's own experience at similar turning points in the past. In the reviewers' thinking, partnership includes concepts of enlistment, mobilization, engagement, participation, regard, and leverage related to the development, governance, promotion, and carrying out of the development ideas, approaches, and activities of the Partnership. The concept extends beyond formal institutional arrangements to an enlistment to ideas.

3.5.2 Insufficiently Realized

The Limitations to the Project Model. The Partnership's current *modus operandi* is organized around partnership but implemented as a project. This has the following short comings. Some partners are implementing contractors, some cooperating partners, some grantees, and some adherents to the idea of a "clean revolution." There are not enough of the latter, too many of the former. As it currently operates, partnership is generally defined by formal agreement with USAID, rather than between independent organizations from Asia and the United States. To meet the stated goal of the Partnership, organizations adhering to the idea of a "clean revolution" are clearly more important than formal arrangements with USAID. This is particularly important in Asia. The *Review* also noted other aspects of management which tend to augur against effective partnership. For example, the Partnership's operational engagement in some areas (e.g., information) makes it competitive with potential private sector alternatives.

The Partnership as a Movement. The *Review* recognizes that the shift from an operational or implementation orientation to a mobilization approach or partnership strategy is challenging-confronting, as it does, USAID's current approach to results, USAID's commitment to capacity and institution building, the operational or implementation mind set of most USAID contractors, and the desire of USAID staff themselves to be on the frontlines. Nevertheless, the *Review* recommends that USAID give serious attention to this issue, perhaps including progress toward the necessary shift in its results strategy - making this management objective part of its substantive agenda.

Suggestions made by different participants in the *Review* include:

Minimize direct implementation and direct engagement of USAID staff and Partnership contractors in meeting specific targets, given the ambition of Partnership goals, the limitation on USAID resources, the improved economic status of most nonpresence countries, the power of public and private incentives to affect improved human resource and institutional capacity in most modernizing countries (e.g., South China), and the real propensity for the Partnership to develop a proprietary mind set about its own operations, narrowing the opportunities for collaboration because of competitiveness with potential partners.

Focus partnership activity on incentives (public and private) and technology cooperation, and limit resource allocations to the direct implementation of capacity or institution building. This is, as discussed above, beyond resource availabilities at the scale required, inappropriate given the income levels of most modernizing economies, and increasingly accepted by modernizing countries as their own responsibility.

Avoid micro-management, rather, empower, devolve, and decentralize, both within the Secretariat structure and in relation to partners and other participating actors.

Enlist an ever-enlarging number of participating actors and partners to the Partnership's values, ideas, goals, approaches, and activities, in preference to bilateral contractual arrangements.

A newer way of doing business. Develop an articulated strategy for enlarging the Partnership approach, and measure progress moving in the sharpened direction.

The R*eview* suggests the following elements for a partnership strategy:

Leadership. Develop a leadership cadre and networks of professionals and organizations to promote ideas and approaches in support of a "clean revolution." In Asia the Partnership will undoubtedly have to put greater emphasis on *developing* a leadership cadre, supporting policy analysis, publications, and regular professional exchange and workshops. In the United States the Partnership can probably *recruit* existing leadership professionals and organizations to its banner (and to partnership with Asian organizations) through existing mechanisms like the Greening of Industry Network, Business Roundtable, and Pacific Basin Economic Commission. It is also important that the Partnership upgrade its own professional standing by engaging staff with greater expertise and experience to its core complement in key areas.

Enlistment. Develop a large and ever-expanding number of professionals and organizations to adopt the ideas and approaches in support of the "clean revolution." This work has dimensions in Asia, the United States, and among the more important multinational organizations. In Asia the targets include government (particularly mainline development and industrial agencies and ministries), the private sector (particularly business and industry associations but including large national leadership firms), and NGOs (particularly in the information areas such as extension and the business and popular press but also including academic and advocacy organizations). In the

United States, the targets include organizations espousing ideas and approaches similar to those espoused by the Partnership. The objective would be to get these organizations engaged in Asia, directly or in partnership with Asian organizations. The Partnership has already identified the major multinationals within its strategy, but the *Review* urges an even greater effort, building on the current success with APEC and budding relationship with the World Bank. Obvious targets include ASEAN and the Asian Development Bank.

Information. Make the broadcast of information about U.S. experience, practice, and technology a major focus of the Partnership strategy, enlisting organizations in the United States that gather pertinent information as a part of their regular institutional mandate (e.g., professional and continuing education organizations, professional and trade publishing organizations, established data banks, and so on). It will then be important to link information from the United States with proactive broadcast systems, such as industrial extension, in Asia. This is particularly important and in sharp contrast with the current, narrower, operational focus of the Partnership to establish its own proprietary CTEM Information Centers. The Partnership might also explore larger, private, and potentially self-supporting systems for broadcasting information available to it from Asia through the Department of Commerce technology representatives to interested actors and partners in the United States.

Technical Support. US-AEP could then develop a technical support capability for its partners, providing high-quality information and other kinds of support (e.g., perhaps even trade leads, and so on). This support needs to be directed to specific targets in response to specific requirements and should reflect value added to what otherwise might be generally available in the market or on the Internet.

Results. Reconsider the R-4 Results package. The *Review* believes the current set of indicators for the "clean revolution" is largely on target and measurable; but, in discussion, apparently some within USAID are concerned that the indicators are too institutional and not sufficiently related to changes in either ambient conditions or firm performance. The *Review* would argue against ambient and firm-level measures, because they would have a tendency to divert attention from the paradigm or system-level change the Partnership seeks to effect and they would encourage an operational or implementation approach, again cutting away from the system-level impact the Partnership seeks. In addition, given the growth rates projected for the region, it is not clear that any positive ambient or firm-level impact will withstand rapid growth in the region. The reality is that pollution loads will increase in the immediate future in Asia. On the other hand, the Partnership itself is in danger of forming a mind set, trying itself to meet indicator targets with its own resources and through its own initiative and contractor operations. This would be an act of futility. As already suggested, the reviewers believe that the only approach likely to meet the Partnership's own ambitious goals is through the ever-enlarging enlistment and engagement of partners. The *Review*, therefore, recommends that the Partnership adopt indicators that measure the extent and effectiveness of the Partnership strategy itself. This is critical if USAID's results system is not to have the perverse effect of undermining an important, forward-looking initiative - one with significant potential to contribute to a turning point for world development.

Interagency Partnership. Develop a stronger set of interagency relationships with mainline foreign policy agencies, increasingly espousing development goals and approaches, specifically exploring opportunities with the Department of State, National Security Council, National Economic Council, Office of the Vice President, Office of Science Policy, and the Office of the Special Trade Representative.

An Expanded Partnership with Commerce. Expand the interagency relationship with the Department of Commerce beyond the Foreign Commercial Service to include the technology and technology information agencies and offices, and expand the relationship with the Environmental Protection Agency to reflect consensus and synergy on the values, approaches, and activities of the Partnership. Current relationships, in contrast, appear to be based more on tools (e.g., technical assistance, training, and so on) and USAID financial support than substantive consensus and synergy.

Asian Partners. Perhaps most important, establish an extensive set of Asian relationships and partnerships, which are noticeably absent from the current alignment. Up to now, Asian professionals and organizations have been targeted for sales promotion, technical assistance, training, exchanges, and other forms of support, rather than long-term mutually dependent relationships.